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U.S. Farm Security Administration
COTTON USED IN CONSTRUCTION OF HOUSES

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The Farm Security Administration recently has completed construction of two houses in Coffee County, Alabama, in which cotton was used for the roof and exterior walls. If this experiment is found to be practical, it may offer one means of helping to solve the problem of surplus cotton.

Cotton fabric, or duck, has long been used by the United States Navy as a water proof, sun proof and spot proof ship decking. Experiments with cotton material for building purposes have shown that cotton duck is free of curls and buckles, and is flexible and weatherproof. It is easily treated to make it fire resistant, and the Bureau of Fire Underwriters accord it a favorable rating. Because of its low thermal conductivity, it is an excellent insulating material. It has been demonstrated in tests by the U. S. Bureau of Standards that cotton duck is superior in this respect to many building materials and equal to rock wool.

In construction such as employed on the Coffee County Homesteads built by Farm Security, cotton duck of approximately 24 ounces weight to the square yard or a No. 7 quality is used for the roof and exterior walls. The duck is stretched over any ordinary smooth backing such as plywood, plaster or composition board, which has been given a prime coat of lead and linseed oil. On this surface a bedding cement is applied, containing casein and other materials, which are also used in processing the duck for fire resistance. The duck is smoothed tightly over this adhesive and nailed with copper or galvanized nails spaced six inches apart.

The roof is painted to harmonize with the other exterior finish and side walls are covered with a mixture of white lead and linseed oil.

With this treatment every four or five years, it is believed the houses can withstand normal weather for approximately half a century.

The treated cotton duck on the outside walls and roof is airtight, watertight, and forms a perfect insulation -- making the houses cooler in summer and warmer in winter.

With a working crew of six men, a cotton house such as those constructed in Coffee County can be built within ten days.

The cost of such a five-room house with about 650 square feet of floor space is around \$1300, which includes kitchen plumbing and electrical wiring. This is practically the same cost as a house of frame construction, but savings of approximately 20 percent could be obtained by mass production using prefabrication processes.

A study of the possible uses of cotton in the building industry, including the use of duck as explained briefly above, has been prepared by the marketing section of the Agricultural Adjustment Administration. A mimeographed copy of the findings is available by writing the AAA and asking for "Diversion of Cotton and Cotton Products from their Normal Channels of Trade - January, 1939 - No. DMAMA MS-41 (Revised)." It includes technical material which throws light on the possibility of using cotton in many different building capacities.

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